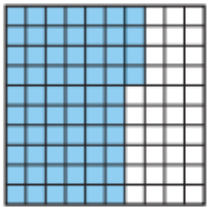
EGYPTIAN AMERICAN INTERNATIONAL SCHOOL
ELEMENTARY MATH DEPARTMENT
2018/2019
G6

Name : …….. Date : …… Class : ……

Revision sheet (Model answer)

1. What percent is represented by the shaded part?



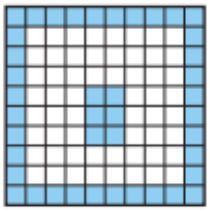
(A) 46%

(B) 60%

● 64%

(D) 640%

2. Write a percent to represent the shaded part.



42%

3. Rosa made a mosaic wall mural using 42 black tiles, 35 blue tiles and 23 red tiles. Write a percent to represent the number of red tiles in the mural.

23%

5. For 5a–5d, choose Yes or No to indicate whether the percent and the fraction represent the same amount.

5a.	50% and $\frac{1}{2}$	● Yes	○ No
5b.	45% and $\frac{4}{5}$	○ Yes	● No
5c.	$\frac{3}{8}$ and 37.5%	● Yes	○ No
5d.	$\frac{2}{10}$ and 210%	○ Yes	● No

6. The school orchestra has 25 woodwind instruments, 15 percussion instruments, 30 string instruments, and 30 brass instruments. Select the portion of the instruments that are percussion. Mark all that apply.

- ● 15%
- ○ 1.5
- ● $\frac{3}{20}$
- ● 0.15

7. For a science project, $\frac{3}{4}$ of the students chose to make a poster and 0.25 of the students wrote a report. Rosa said that more students made a poster than wrote a report. Do you agree with Rosa? Use numbers and words to support your answer.

Yes, I agree with Rosa. Possible explanation: I converted $\frac{3}{4}$ to 75% and converted 0.25 to 25%. 75% is greater than 25%.

8. Select other ways to write 0.875. Mark all that apply.

- ○ 875%
- ● 87.5%
- ● $\frac{7}{8}$
- ○ $\frac{875}{100}$

9. There are 88 marbles in a bin and 25% of the marbles are red.

There are [22 (circled) / 25 / 62 / 66] red marbles in the bin.

10. Harrison has 30 CDs in his music collection. If 40% of the CDs are country music and 30% are pop music, how many CDs are other types of music?

9 CDs

11. For numbers 11a–11b, choose <, >, or =.

11a. 30% of 90 [< (circled) / > / =] 35% of 80

11b. 25% of 16 [< (circled) / > / =] 20% of 25

12. GO DEEPER There were 200 people who voted at the town council meeting. Of these people, 40% voted for building a new basketball court in the park. How many people voted against building the new basketball court? Use numbers and words to explain your answer.

120 people are against building the basketball court.
Possible explanation: 40% of 200 equals 80 and 200 − 80 = 120.

13. James and Sarah went out to lunch. The price of lunch for both of them was $20. They tipped their server 20% of that amount. How much did each person pay if they shared the price of lunch and the tip equally?

$12

Use exponents to rewrite the expression.

$3 \times 3 \times 3 \times 3 \times 5 \times 5$

$3^{4} \times 5^{2}$

A plumber charges $10 for transportation and $55 per hour for repairs. Write an expression that can be used to find the cost in dollars for a repair that takes h hours.

$10 + 55h$

Ellen is 2 years older than her brother Luke. Let k represent Luke's age. Identify the expression that can be used to find Ellen's age.

A. $k - 2$

B. $k + 2$

C. $2k$

D. $\frac{k}{2}$

Write 4^3 using repeated multiplication. Then find the value of 4^3.

$4^3 = 4 \times 4 \times 4 = 64$

Jasmine is buying beans. She bought r pounds of red beans that cost $3 per pound and b pounds of black beans that cost $2 per pound. The total amount of her purchase is given by the expression $3r + 2b$. Select the terms of the expression. Mark all that apply.

A. 2

B. $2b$

C. 3

D. $3r$

Choose the number that makes the sentence true.
The formula $V = s^3$ gives the volume V of a cube with side length s.
The volume of a cube that has a side length of 8 inches

is [24 / 64 / (512)] inches cubed.

Liang is ordering new chairs and cushions for his dining room table.
A new chair costs $88 and a new cushion costs $12. Shipping costs $34.
The expression $88c + 12c + 34$ gives the total cost for buying c sets of chairs and cushions. Simplify the expression by combining like terms.

100c + 34

Mr. Ruiz writes the expression $5 \times (2 + 1)^2 \div 3$ on the board.
Chelsea says the first step is to evaluate 1^2. Explain Chelsea's mistake. Then, evaluate the expression.

Chelsea should have said that the first step is to evaluate (2 + 1).

$5 \times (2 + 1)^2 \div 3$
$5 \times (3)^2 \div 3$
$5 \times 9 \div 3$
$45 \div 3$
15

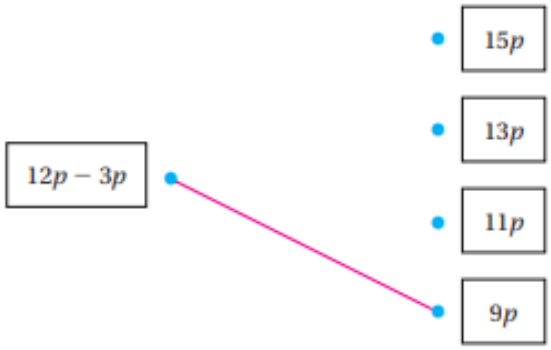
Jake writes this word expression.

the product of 7 and m

Write an algebraic expression for the word expression. Then, evaluate the expression for $m = 4$. Show your work.

7m
Replace *m* with 4: 7 × 4
Multiply: 28

Sora has some bags that each contain 12 potatoes. She takes 3 potatoes from each bag. The expression $12p - 3p$ represents the number of potatoes p left in the bags. Simplify the expression by combining like terms. Draw a line to match the expression with the simplified expression.



GO DEEPER Logan works at a florist. He earns \$600 per week plus \$5 for each floral arrangement he delivers. Write an expression that gives the amount in dollars that Logan earns for delivering f floral arrangements. Use the expression to find the amount Logan will earn if he delivers 45 floral arrangements in one week. Show your work.

$600 + 5f$; Logan will earn \$825.

$600 + 5f$

$600 + 5(45)$

$600 + 225$

825

Use properties of operations to determine whether $5(n + 1) + 2n$ and $7n + 1$ are equivalent expressions.

$5n + 5 + 2n$; Distributive Property

$5n + 2n + 5$; Commutative Property of Addition

$7n + 5$; Combine like terms.

$5n + 5 + 2n$ is equivalent to $7n + 5$. Since $7n + 5$ is not equivalent to $7n + 1$, $5n + 5 + 2n$ is not equivalent to $7n + 1$.

Write the algebraic expression in the box that shows an equivalent expression.

$3(k + 2)$	$3k + 2k$	$2 + 6k + 3$

$6k + 5$	$5k$	$3k + 6$
$2 + 6k + 3$	$3k + 2k$	$3(k + 2)$

For numbers 1a–1c, choose Yes or No to indicate whether the given value of the variable is a solution of the equation.

1a. $\frac{2}{5}v = 10; v = 25$ ● Yes ○ No

1b. $n + 5 = 15; n = 5$ ○ Yes ● No

1c. $5z = 25; z = 5$ ● Yes ○ No

The distance from third base to home plate is 88.9 feet. Romeo was 22.1 feet away from third base when he was tagged out. The equation $88.9 - t = 22.1$ can be used to determine how far he needed to run to get to home plate. Using substitution, the coach determines that Romeo needed

to run [66 / 66.8 / 111] feet to get to home plate.

There are 84 grapes in a bag. Four friends are sharing the grapes. Write an equation that can be used to find out how many grapes g each friend will get if each friend gets the same number of grapes.

$4g = 84$

Match each scenario with the equation that can be used to solve it.

Jane's dog eats 3 pounds of food a week. How many weeks will a 24-pound bag last?	$3x = 24$
There are 39 students in the gym, and there are an equal number of students in each class. If three classes are in the gym, how many students are in each class?	$3x = 39$
There are 4 games at the carnival. Kevin played all the games in 24 minutes. How many minutes did he spend at each game if he spent an equal amount of time at each?	$4x = 24$

GO DEEPER Frank's hockey team attempted 15 more goals than Spencer's team. Frank's team attempted 23 goals. Write and solve an equation that can be used to find how many goals Spencer's team attempted.

$s + 15 = 23$; $s = 8$; 8 goals

Gabriella and Max worked on their math project for a total of 6 hours. Max worked on the project for 2 hours by himself. Solve the equation $x + 2 = 6$ to find out how many hours Gabriella worked on the project.

4 hours

Select the equations that have the solution $m = 17$. Mark all that apply.

- (A) $3 + m = 21$
- ● $m - 2 = 15$
- ● $14 = m - 3$
- ● $2 = m - 15$

For numbers 10a–10d, choose Yes or No to indicate whether the equation has the solution $x = 12$.

10a.	$\frac{3}{4}x = 9$	● Yes	○ No
10b.	$3x = 36$	● Yes	○ No
10c.	$5x = 70$	○ Yes	● No
10d.	$\frac{x}{3} = 4$	● Yes	○ No

Karen is working on her math homework. She solves the equation $\frac{b}{8} = 56$ and says that the solution is $b = 7$. Do you agree or disagree with Karen? Use words and numbers to support your answer. If her answer is incorrect, find the correct answer.

I disagree with Karen. Possible explanation: The equation is a division equation that can be read as "b divided by 8 is equal to 56". Karen solved it as if the equation were $8b = 56$. The correct way to solve the equation is to multiply both sides of the equation by 8: $8 \cdot \frac{b}{8} = 56 \cdot 8$, so $b = 448$.

THINK SMARTER+ The maximum number of players allowed on a lacrosse team is 23. The inequality $t \leq 23$ represents the total number of players t allowed on the team.

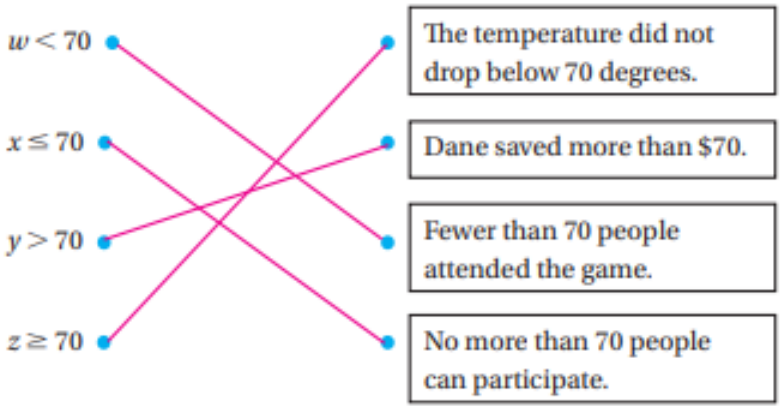
Two possible solutions for the inequality are

23	and	26.
25		24.
27		22.

The maximum capacity of the school auditorium is 420 people. Write an inequality for the situation. Tell what type of numbers the variable in the inequality can represent.

$c \leq 420$, where c is a whole number.

Match the inequality to the word sentence it represents.



Cydney graphed the inequality $d \leq 14$.

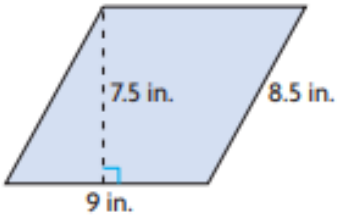
Dylan said that 14 is not a solution of the inequality. Do you agree or disagree with Dylan? Use numbers and words to support your answer.

I disagree with Dylan. Possible explanation: Since the circle is filled in, 14 is part of the solution.

Suppose Cydney's graph had an empty circle at 14. Write the inequality represented by this graph.

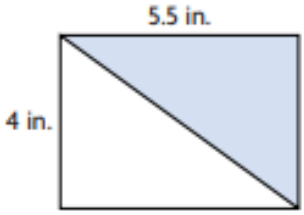
$d < 14$

Find the area of the parallelogram.



The area is 67.5 $in.^2$

A wall tile is two different colors. What is the area of the white part of the tile? Explain how you found your answer.



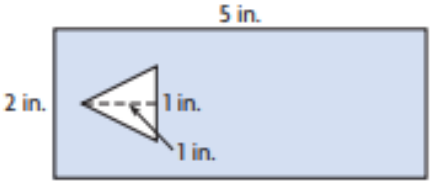
11 $in.^2$; Possible explanation: The area of the rectangle is $4 \times 5.5 = 22$, or 22 $in.^2$ The area of the triangle is $\frac{1}{2}$ the area of the rectangle: $\frac{1}{2} \times 22 = 11$, or 11 $in.^2$

The area of a triangle is 36 ft^2. For numbers 3a–3d, select Yes or No to tell if the dimensions could be the height and base of the triangle.

3a.	$h = 3$ ft, $b = 12$ ft	○ Yes	● No
3b.	$h = 3$ ft, $b = 24$ ft	● Yes	○ No
3c.	$h = 4$ ft, $b = 18$ ft	● Yes	○ No
3d.	$h = 4$ ft, $b = 9$ ft	○ Yes	● No

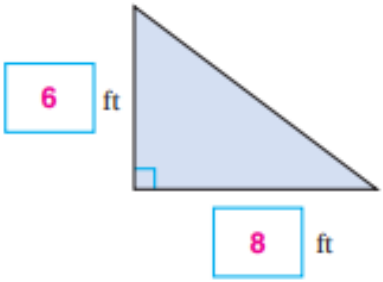
GO DEEPER A rectangular plastic bookmark has a triangle cut out of it. Use the diagram of the bookmark to complete the table.

Area of Rectangle	Area of Triangle	Square Inches of Plastic in Bookmark
10 $in.^2$	0.5 $in.^2$	9.5 $in.^2$



The area of the triangle is 24 ft^2. Use the numbers to label the height and base of the triangle.

2	4	6	8	10	20



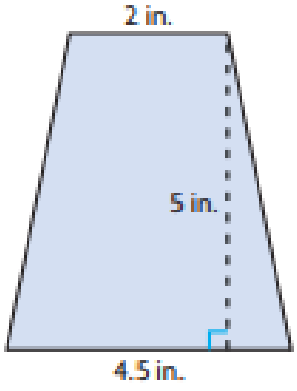
A trapezoid has an area of 32 $in.^2$. If the lengths of the bases are 6 in. and 6.8 in., what is the height?

5 in.

A pillow is in the shape of a regular pentagon. The front of the pillow is made from 5 pieces of fabric that are congruent triangles. Each triangle has an area of 22 $in.^2$. What is the area of the front of the pillow?

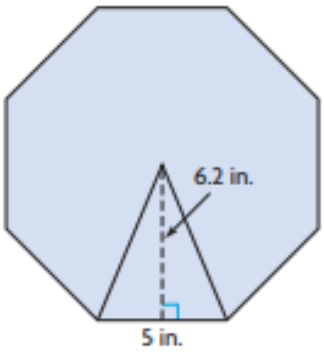
110 $in.^2$

Which expressions can be used to find the area of the trapezoid? Mark all that apply.



- (A) $\frac{1}{2} \times (5 + 2) \times 4.5$
- (C) $\frac{1}{2} \times (5 + 4.5) \times 2$
- ● $\frac{1}{2} \times (2 + 4.5) \times 5$
- ● $\frac{1}{2} \times (6.5) \times 5$

Name the polygon and find its area. Show your work.

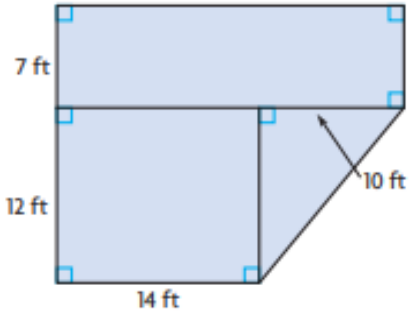


polygon: octagon area: 124 in.^{2}

Area of Triangle $= \frac{1}{2}(5 \times 6.2) = 15.5$

Area of Octagon $= 8 \times 15.5 = 124$

A carpenter needs to replace some flooring in a house.



Select the expression that can be used to find the total area of the flooring to be replaced. Mark all that apply.

- (A) 19×14
- $19 \times 24 - \frac{1}{2} \times 10 \times 12$
- $168 + 12 \times 14 + 60$
- $7 \times 24 + 12 \times 14 + \frac{1}{2} \times 10 \times 12$

The roof of Kamden's house is shaped like a parallelogram. The base of the roof is 13 m and the area is 110.5 m^2. Choose a number and unit to make a true statement.

The height of the roof is

123.5	(m.)
97.5	m^2.
17	m^3.
(8.5)	

Elaine makes a rectangular pyramid from paper.

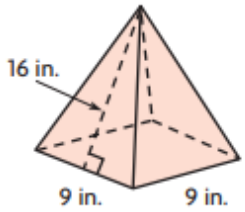
The base is a [rectangle. / pentagon. / triangle.] The lateral faces are [rectangles. / squares. / triangles.]

A triangular pyramid has a base with an area of 11.3 square meters, and lateral faces with bases of 5.1 meters and heights of 9 meters.

Write an expression that can be used to find the surface area of the triangular pyramid.

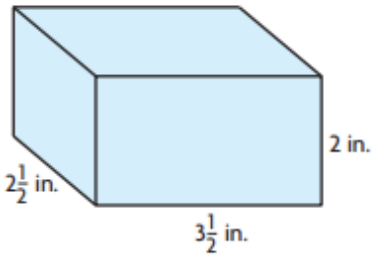
$$11.3 + 3 \times \frac{1}{2} \times 5.1 \times 9$$

Identify the figure shown and find its surface area. Explain how you found your answer.



The figure is a square pyramid and the surface area is 369 square inches. Possible explanation: I found the area of the square. Then I multiplied the area of one triangle by 4 since there are 4 congruent triangles. Finally, I found the sum of all the areas.

Dominique has a box of sewing buttons that is in the shape of a rectangular prism.



The volume of the box is $2\frac{1}{2}$ in. $\times$ $3\frac{1}{2}$ in. $\times$ [2 in. / $2\frac{1}{2}$ in. / $3\frac{1}{2}$ in.] = [8 in.^{3} / $17\frac{1}{2}$ in.^{3} / 35 in.^{3}]

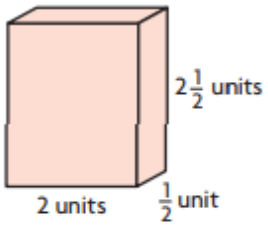
Emily has a decorative box that is shaped like a cube with a height of 5 inches. What is the surface area of the box?

150 $in.^2$

Albert recently purchased a fish tank for his home. Match each question with the geometric measure that would be most appropriate for each scenario.

How much water can the fish tank hold?	The area of the base of the fish tank
How much material would it take to cover the entire fish tank?	The surface area of the fish tank
How much space would the fish tank occupy on the table?	The volume of the fish tank

Select the expressions that show the volume of the rectangular prism. Mark all that apply.



- (A) $2(2 \text{ units} \times 2\frac{1}{2} \text{ units}) + 2(2 \text{ units} \times \frac{1}{2} \text{ unit}) + 2(\frac{1}{2} \text{ unit} \times 2\frac{1}{2} \text{ units})$
- (B) $2(2 \text{ units} \times \frac{1}{2} \text{ unit}) + 4(2 \text{ units} \times 2\frac{1}{2} \text{ units})$
- $2 \text{ units} \times \frac{1}{2} \text{ unit} \times 2\frac{1}{2} \text{ units}$
- 2.5 cubic units

Stella received a package in the shape of a rectangular prism. The box has a length of $2\frac{1}{2}$ feet, a width of $1\frac{1}{2}$ feet, and a height of 4 feet.

Part A

Stella wants to cover the box with wrapping paper. How much paper will she need? Explain how you found your answer.

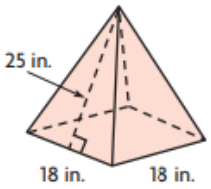
39.5 ft^2; Possible answer: I needed to find the surface area. First, I calculated the area of each face as follows: $1\frac{1}{2} \times 2\frac{1}{2} = 3.75$; $1\frac{1}{2} \times 2\frac{1}{2} = 3.75$; $2\frac{1}{2} \times 4 = 10$; $2\frac{1}{2} \times 4 = 10$; $1\frac{1}{2} \times 4 = 6$; $1\frac{1}{2} \times 4 = 6$. Then I found the sum of all the areas and got 39.5 ft^2.

Part B

Can the box hold 16 cubic feet of packing peanuts? Explain how you know.

No; Possible explanation: I used $V = Bh$ to find the volume of the box:
$V = 2\frac{1}{2} \times 1\frac{1}{2} \times 4 = 15$ ft^3. The box can only hold 15 ft^3, and 15 ft^3 $<$ 16 ft^3. So, it is not big enough to hold 16 ft^3 of packing peanuts.

Bella says the lateral area of the square pyramid is 1,224 in.^{2} Do you agree or disagree with Bella? Use numbers and words to support your answer. If you disagree with Bella, find the correct answer.



I disagree with Bella. Possible explanation: Bella found the surface area of the square pyramid, not the lateral area. The lateral area is $4(\frac{1}{2} \times 18 \times 25) = 900$ in.^{2}

GO DEEPER Lourdes is decorating a toy box for her sister. She will use self-adhesive paper to cover all of the exterior sides except for the bottom of the box. The toy box is 4 feet long, 3 feet wide, and 2 feet high. How many square feet of adhesive paper will Lourdes use to cover the box?

40 square feet